

AQA AS Level IT Module 1

Security: Definition: Internet security is the practise of protecting and preserving private resources and information on the Internet.

Overview:

- Security: safe from physical loss.
- Integrity: accuracy of stored data.
- Privacy: protected from unauthorised access

Physical Security:

- Locks, alarms, security staff, vetting of staff, staff/visitors ID, limited access.

Software Security:

- Passwords, Operating System, varying levels of access, monitor failed attempts, log on.

Procedures:

- Periodic back-up of data, off site storage, contingency plans for failure.
- Automatic call back for data requests.
- Data encryption using various methods.
- Firewall single security point between LAN and Internet for filter and access log.
- Integrity by error checking.
- Anti-virus software, and limited access points for introduction.

Internet:

Firewalls: physical security (hardware/software configuration) controlling only specified authorised communications access, privacy of communication, compartmentalise different servers and networks within a company, checking and rerouting but slows efficiency.

Passwords: identify and authenticate users, open to human failure and intruders, use of one time password systems. Valid for a fixed length of time, minimum amount of mixed alpha-numerics , different passwords for different parts of the system.

Encryption: the coding of data (algorithm/transfer table), can be stored on a server, and data in transit in a network, intended users have key to access. Different methods of standard encryption USA/Europe, relies on keywords and passwords. Private key: same key to encode and decode data, Public key: one key to encode another to decode, one key can be public without compromising the privacy, levels of access.

Authentication: ensuring the users are who they say they are. (access Internet).

Integrity: ensuring that the data sent has not been interfered with, it is maintained by digital signatures. A digital signature is a block of data at the end of the message, if the data is altered the signature will not verify.

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